

Figure 1

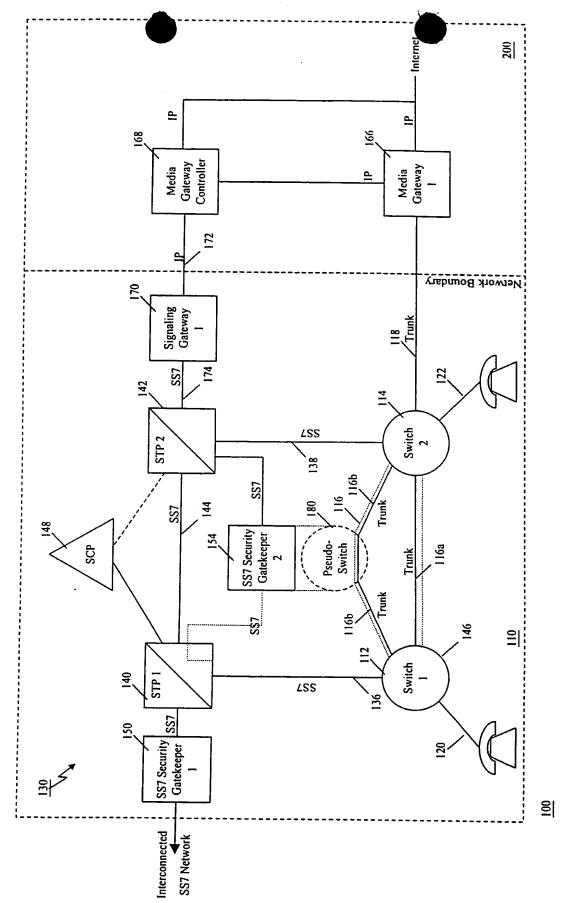


Figure 2

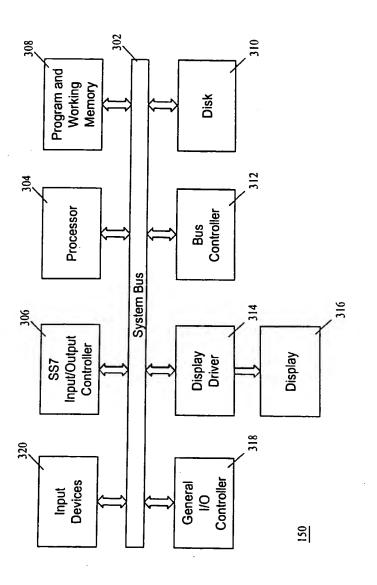


Figure 3

Transaction Capabilities Applications Part (TCAP) User Part (ISUP)	Signaling Connection Control Part (SCCP)	Message Transfer Part (MTP) Level 3 Message Routing Between Signaling Points in SS7 Network	Message Transfer Part Level 2 Ensures Accurate end-to-end transmission of message across a signaling link. Flow Control, Message Sequence, Validation, and Error Checking	Message Transfer Part Level 1 Physical, Electrical and Functional Characteristics of the Digital Signaling Link. e.g., E-1; DS-1; V.35; DS-0, DS-0A
Trans Telephone User Part (TUP)	Signaling	Message Tra Message Routing Betw	Message Ensures Accur of message Flow Control, Message Se	Message Physical, Electrical and Functiona e.g., E-1; D;

SS7 Protocol Stack

Figure 4

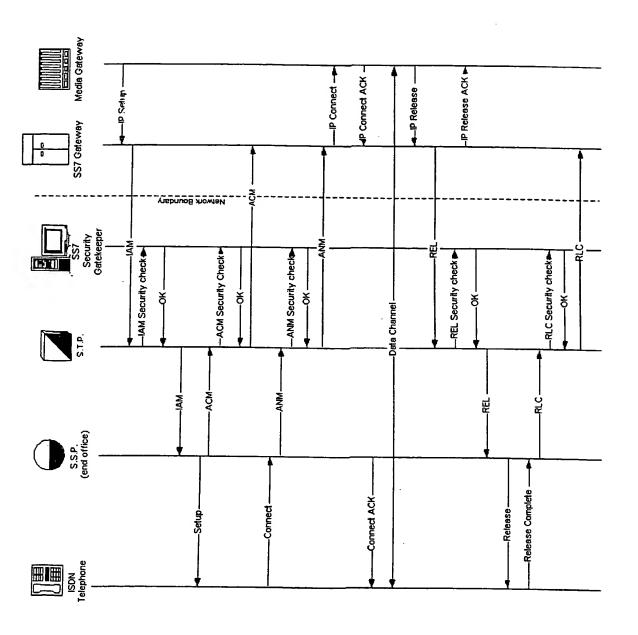


Figure 5

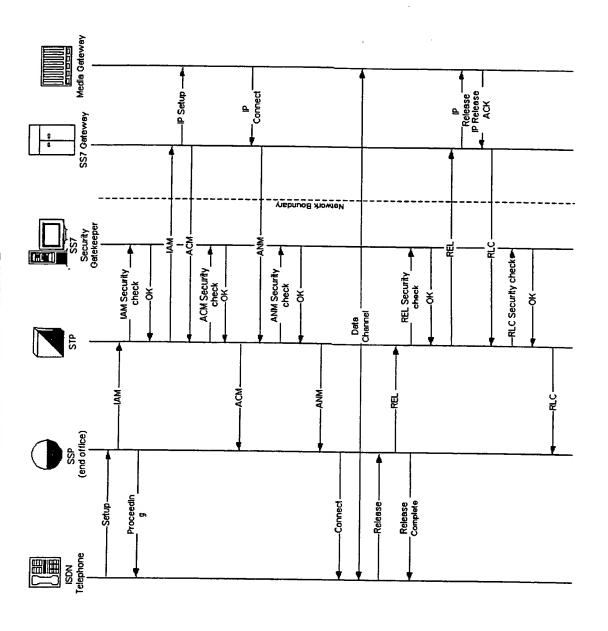


Figure 6

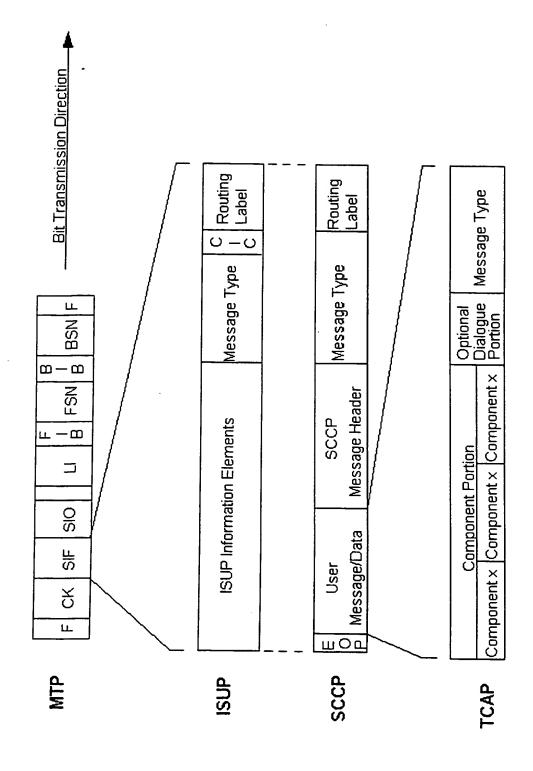


Figure 7

ISDN User Part Message Format Coding (LSSGR GR-606, Iss. 3 11/99)

		88	7	9	2	4		- 2	-
Flag	∢	0	-		_			_	0
Forward sequence Information	8	BSN/ BIB		Back	ward	Sequer	Backward Sequence Number	nper	
Backward Sequence Information	U	FSN/ FIB		For	vard Se	odneuc	Forward Sequence Number)er	
Message length Indicator	۵	Š	Spare		Lenç	Length Indicator	cator		
Service Information	ш	National Network Opt.	onal COpt.	Σÿ	Mess Priority	ļ	MTP U	MTP User Part (ISUP)	١
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					Des Poi	Destination Point Code	- Φ	•	
Routing Label	щ								
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					5 2	Origination Point Code	= .	•	
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Message Type	I			~	Меѕѕаде Туре	је Тур	6		
ISUP Information Element	_			<u> </u>	ISUP Parameters	ameter	ي د		
Check Bits	7				Check Bits			'	

Figure 8

Name of ISUP Parameter Length Indicator Parameter Content Parameter	• • •	Name of ISUP Parameter	Length Indicator Parameter	Content Parameter
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Figure 9

Security Context Security Context Length Indicator Parameter Security Context Parameter Value

Figure 10

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Value	Meaning
 0	Not used.
 1	Data Encryption Algorithm
2	Integrity Check
3	Message Code Authentication
 4	Sequence, Timestamp and Identification

Figure 11

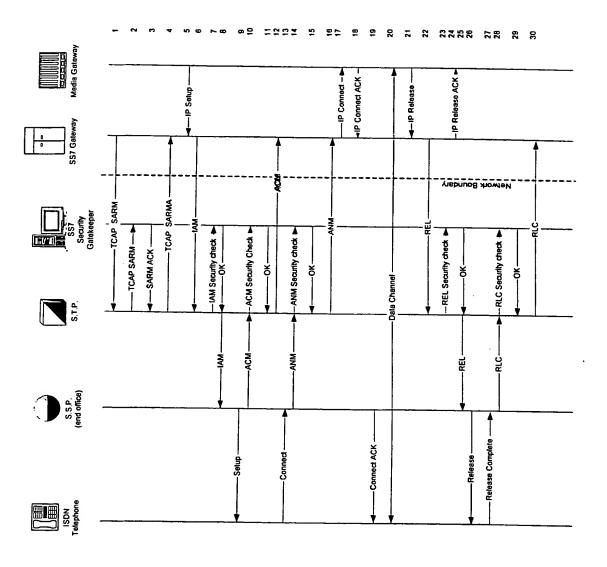


Figure 12

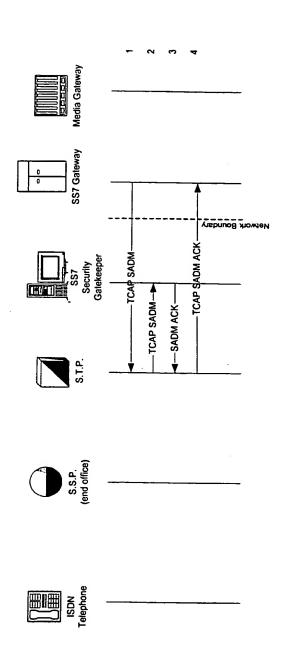


Figure 13

No. of Octets = Length Indicator Value Optional Parameter Code Optional Parameter Length Indicator Optional Parameter No. of Octets = Length Indicator Value		Offset of 1st Mandatory Var. Parameter	Calling Party Category	Forward Call Indicator Bits PI	Forward Call Indicator Bits HA	CIC Low-Order Octet	SIO and Routing Label
Called Party Number	Length Indicator of Called Party No.	Offset of 2nd Mandatory Var. Parameter Offset of Start of Operational Part Length Indicator of User Service Info	Offset of 1st Mandatory Var. Parameter Offset of 2nd Mandatory Var. Parameter Offset of Start of Operational Part Length Indicator of User Service Info	Calling Party Category Offset of 1st Mandatory Var. Parameter Offset of 2nd Mandatory Var. Parameter Offset of Start of Operational Part Length Indicator of User Service Info	Forward Call Indicator Bits P1 Calling Party Category Offset of 1st Mandatory Var. Parameter Offset of 2nd Mandatory Var. Parameter Offset of Start of Operational Part Length Indicator of User Service Info	2-bits spare Message Type = 1 Nature of Connection Indicators Forward Call Indicator Bits HA Forward Call Indicator Bits P1 Calling Party Category Offset of 1st Mandatory Var. Parameter Offset of Start of Operational Part Length Indicator of User Service Info	CIC Low-Order Octet 2-bits Spare Message Type = 1 Nature of Connection Indicators Forward Call Indicator Bits HA Forward Call Indicator Bits P1 Calling Party Category Offset of 1st Mandatory Var. Parameter Offset of Start of Operational Part Length Indicator of User Service Info
User Service Information No. of Octets = Length Indicator Value Length Indicator of Called Party No. Called Party Number	User Service Information No. of Octets = Length Indicator Value	Offset of 2nd Mandatory Var. Parameter	Offset of 1st Mandatory Var. Parameter Offset of 2nd Mandatory Var. Parameter	Offset of 2nd Mandatory Var. Parameter Offset of 2nd Mandatory Var. Parameter	Calling Party Category Offset of 1st Mandatory Var. Parameter Offset of 2nd Mandatory Var. Parameter	2-bits spare Message Type = 1 Nature of Connection Indicators Forward Call Indicator Bits HA Forward Call Indicator Bits P1 Calling Party Category Offset of 1st Mandatory Var. Parameter Offset of 2nd Mandatory Var. Parameter	CIC Low-Order Octet 2-bits spare Message Type = 1 Nature of Connection Indicators Forward Call Indicator Bits HA Forward Call Indicator Bits P1 Calling Party Category Offset of 1st Mandatory Var. Parameter Offset of 2nd Mandatory Var. Parameter
Offset of Start of Operational Part Length Indicator of User Service Info User Service Information No. of Octets = Length Indicator Value Length Indicator of Called Party No. Called Party Number	Offset of Start of Operational Part Length Indicator of User Service Info User Service Information No. of Octets = Length Indicator Value		Offset of 1st Mandatory Var. Parameter	Calling Party Category Offset of 1st Mandatory Var. Parameter	Forward Call Indicator Bits P1 Calling Party Category Offset of 1st Mandatory Var. Parameter	2-bits spare Message Type = 1 Nature of Connection Indicators Forward Call Indicator Bits HA Forward Call Indicator Bits P1 Calling Party Category Offset of 1st Mandatory Var. Parameter	CIC Low-Order Octet 2-bits Spare CIC High-Order 6-bits Message Type = 1 Nature of Connection Indicators Forward Call Indicator Bits HA Forward Call Indicator Bits P1 Calling Party Category Offset of 1st Mandatory Var. Parameter
Forward Call Indicator Bits HA Forward Call Indicator Bits P1 Calling Party Category Offset of 1st Mandatory Var. Parameter Offset of 2nd Mandatory Var. Parameter Offset of Start of Operational Part Length Indicator of User Service Info User Service Information No. of Octets = Length Indicator Value Length Indicator of Called Party No. Called Party Number	Forward Call Indicator Bits HA Forward Call Indicator Bits P1 Calling Party Category Offset of 1st Mandatory Var. Parameter Offset of 2nd Mandatory Var. Parameter Offset of Start of Operational Part Length Indicator of User Service Info User Service Information No. of Octets = Length Indicator Value	Call Indicator Bits Call Indicator Bits ng Party Category	Call Indicator Bits Call Indicator Bits	Call Indicator Bits		CIC	CIC Low-
Nature of Connection Indicators Forward Call Indicator Bits HA Forward Call Indicator Bits P1 Calling Party Category Offset of 1st Mandatory Var. Parameter Offset of Start of Operational Part Length Indicator of User Service Info User Service Information No. of Octets = Length Indicator Value Length Indicator of Called Party No. Called Party Number	Nature of Connection Indicators Forward Call Indicator Bits HA Forward Call Indicator Bits P1 Calling Party Category Offset of 1st Mandatory Var. Parameter Offset of 2nd Mandatory Var. Parameter Offset of Start of Operational Part Length Indicator of User Service Info User Service Information No. of Octets = Length Indicator Value	Nature of Connection Indicators Forward Call Indicator Bits HA Forward Call Indicator Bits P1 Calling Party Category	Nature of Connection Indicators Forward Call Indicator Bits HA Forward Call Indicator Bits P1	Nature of Connection Indicators Forward Call Indicator Bits HA	Nature of Connection Indicators	CIC	CIC Low-
Message Type = 1 Nature of Connection Indicators Forward Call Indicator Bits HA Forward Call Indicator Bits P1 Calling Party Category Offset of 1st Mandatory Var. Parameter Offset of 2nd Mandatory Var. Parameter Offset of Start of Operational Part Length Indicator of User Service Info User Service Information No. of Octets = Length Indicator Value Length Indicator of Called Party No. Called Party Number	Message Type = 1 Nature of Connection Indicators Forward Call Indicator Bits HA Forward Call Indicator Bits P1 Calling Party Category Offset of 1st Mandatory Var. Parameter Offset of Start of Operational Part Length Indicator of User Service Info User Service Information No. of Octets = Length Indicator Value	Message Type = 1 Nature of Connection Indicators Forward Call Indicator Bits HA Forward Call Indicator Bits P1 Calling Party Category	Message Type = 1 Nature of Connection Indicators Forward Call Indicator Bits HA Forward Call Indicator Bits P1	Message Type = 1 Nature of Connection Indicators Forward Call Indicator Bits HA	Message Type = 1 Nature of Connection Indicators		CIC Low-Order

SIO and Routing Label	CIC Low-Order Octet	2-bits CIC High-Order 6-bits	Message Type = 6	Backward Call Indicator Bits H., A	Backward Call Indicator Bits PI	Offset to Start of Optional Part	Optional Parameter Code	Optional Parameter Length Indicator	Optional Parameter No. of Octets = Length Indicator Value	End of Optional Parameters Indicator
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Fig. 15

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SIO and Routing Label	CIC Low-Order Octet	CIC High-Order 6-bits	Message Type = 9	Offset to Start of Optional Part	Optional Parameter Code	Optional Parameter Length Indicator	Optional Parameter No. of Octets = Length Indicator Value	End of Optional Parameters Indicator
		2-bits spare		Offs	0	Option	No. of C	End of

FIG. 76

SIO and Routing Label	CIC Low-Order Octet	CIC High-Order 6-bits	Message Type = 16
		2-bits spare	

Fig. 18

SIO and Routing Label	CIC Low-Order Octet	CIC High-Order 6-bits	Message Type = 12	Offset of 1st Mandatory Var. Parameter	Offset of Start of Operational Part	Length Indicator of Cause Indicators	Release Cause Indicator Parameter No. of Octets = Length Indicator Value	Optional Parameter Code	Optional Parameter Length Indicator	Optional Parameter No. of Octets = Length Indicator Value	End of Optional Parameters Indicator
SIO and	CIC Lo	2-bits Cl	Messa	Offset of 1st Mar	Offset of Star	Length Indicato	Release Cause No. of Octets = I	Optional F	Optional Param	Option: No. of Octets = I	End of Optional

Fig 17

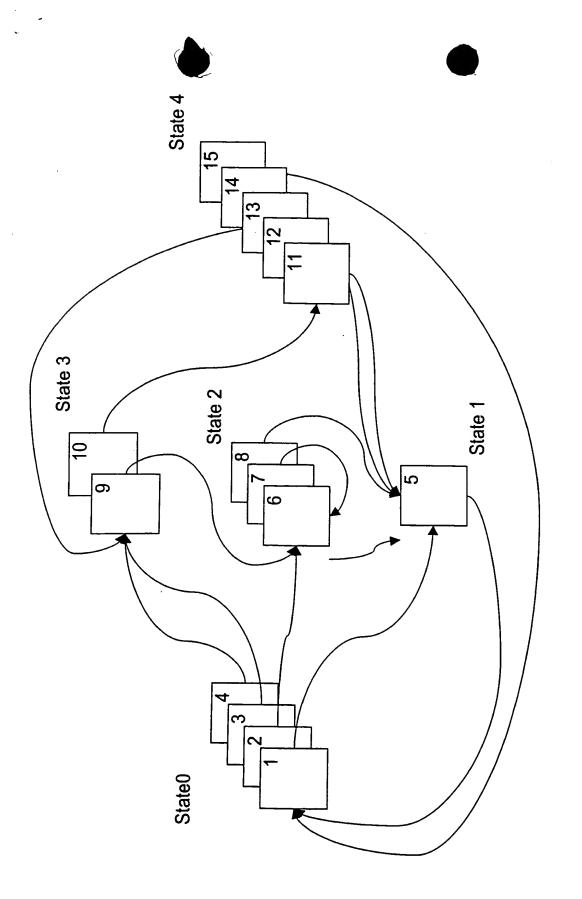


Fig. 19